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Weight loss is the key factor in lifestyle intervention to prevent diabetes.

Preventing type 2 diabetes is a very important clinical intervention and has the potential to reduce morbidity and health care expenditures substantially. The Diabetes Prevention Program (1) was the landmark multi-center study conducted in the U.S. that proved lifestyle intervention could prevent diabetes. The study compared a lifestyle intervention to metformin and placebo in patients with Impaired Glucose Tolerance from multiple ethnic groups over a three year period. The lifestyle intervention reduced the incidence of diabetes by 58% and was much more effective than metformin. The "intensive" lifestyle intervention was designed to be a practical combination of dietary changes and increased physical activity with three basic goals: weight reduction of 7% from baseline, reduction in dietary fat to 25% of calories, and an increase in moderate physical activity to at least 150 minutes per week.

The DPP investigators recently looked at the group who participated in the lifestyle arm to see how changes in weight, diet and physical activity contributed to the decreased risk of diabetes.(2) At the three year follow-up, the average weight loss was 4.1 kg from baseline and physical activity increased. At the end of the first year, the percentage of calories from fat decreased from 34.1% at baseline to 27.5% in the lifestyle participants. The lowest risk for diabetes occurred in those who met all three goals lifestyle goals. Meeting fat reduction goals and physical activity goals predicted weight loss.

When the investigators examined several models to predict the decreased incidence of diabetes, they found that weight loss was the dominant determinant of the reduced risk of diabetes. The risk of diabetes was decreased 42% for each 5 kg of weight lost. (Hazard Retro 0.42 [95%CI 0.35-0.52; $p < 0.0001$]). On average, there was a 16% decrease in the risk of diabetes with each kilogram of weight loss adjusted for changes in diet and physical activity. The reduction in diabetes risk with weight loss was similar across all race/ethnic groups, for both sexes, and for all ages. It is also important to note that the estimates of the effect of weight loss in the DPP lifestyle arm were consistent with those from other studies. In the Multiple Risk Factor Intervention Trial (MRFIT) conducted in men who were not at particularly high risk of diabetes, the investigators found a 25% reduction in risk of diabetes for every kilogram of weight loss in the intervention group and a 16% reduction in the control group per kilogram. (3) Thus the recent report from the DPP is very encouraging. A small weight loss is key to diabetes prevention.

¹. The Diabetes Prevention Program Research Group. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. N Engl J Med 2002;346:393-403.

². Hamman RF, Wing RR, Edelstein SL, Lachin JM, Bray GA, Delahanty L, Hoskin M, Kriska AM, Mayer-Davis EJ, Pi-Sunyer X, Regensteiner J, Vendetti B, Wylie-Rosett J for the Diabetes Prevention Program Research Group. Effect of weight loss with lifestyle intervention on risk of diabetes. Diabetes Care 2006;29:2102-2107.

³. Davey Smith G, Bracha Y, Svendsen KH, Neaton JD, Haffner SM, Kuller LH for the Multiple Risk Factor Intervention Trial Research Group. Incidence of type 2 diabetes in the randomized multiple risk factor intervention trial. Ann Intern Med 2005;142:313-322.

With only 2 1/4 pounds of weight loss, there was a 16% decreased risk for diabetes!



FIGURE 1: PHYSICIAN OFFICES PARTICIPATING IN THE DIABETES QUALITY CARE MONITORING SYSTEM (DQCMS) PROJECT, April 2006 (n=32)

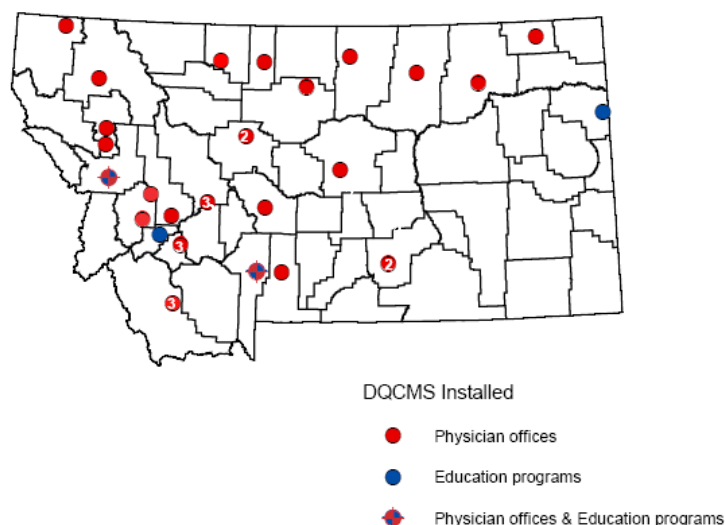


FIGURE 2: DIABETES CARE INDICATORS FROM MONTANA PHYSICIAN OFFICES PARTICIPATING IN THE DCMS/ DQCMS PROJECT, BASELINE (N = 22 CLINICS; 3,629 PATIENTS) AND OCTOBER 2006 (N = 27 CLINICS; 5,778

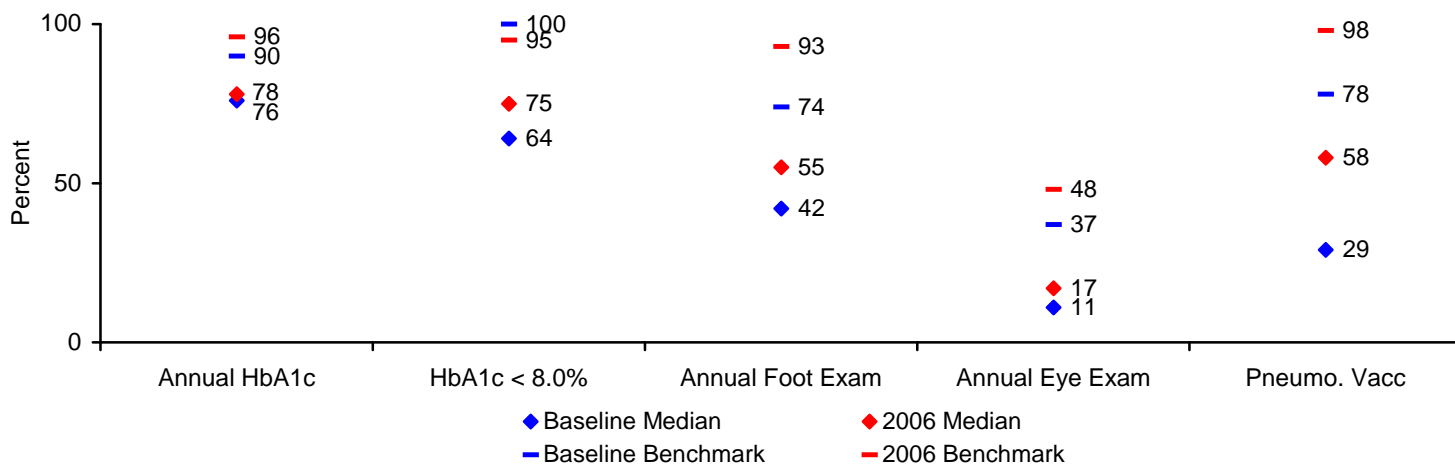
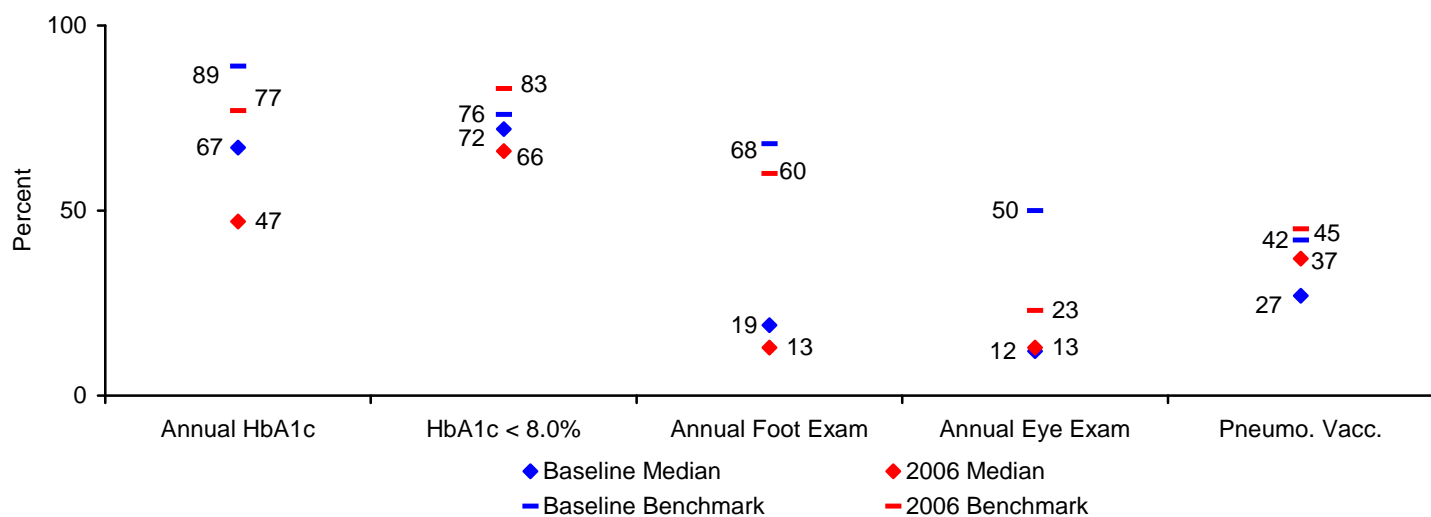


FIGURE 3: DIABETES CARE INDICATORS FROM MONTANA DIABETES EDUCATION PROGRAMS PARTICIPATING IN THE DQCMS PROJECT, BASELINE (N = 4 SITES; 912 PATIENTS) AND OCTOBER 2006 (N = 5 SITES; 976 PATIENTS)



Success Story

Kalispell Regional Medical Center's Diabetes Prevention Program “Living On The Edge.....Of Diabetes”

One of the more exciting classes to come out of the Diabetes Program at KRMC is the diabetes prevention program, based on the DPP study. This class is taught by Jennifer Janetski, MS RD CDE and Cathy Lisowski, MS Exercise Physiologist and most of the educational handouts used in this class are the Lifestyle Balance participant materials from the DPP.

The format of this class is a 2 hour per week education session which lasts for four weeks, with a monthly 1 hour follow-up for 1 year after that. Typically, 1 hour of class is taught by the dietitian and 1 hour is taught by the exercise physiologist. In the follow up sessions, ½ of class is taught by the RD and ½ is taught by the exercise physiologist, where again, patients will exercise during this period of time.

Topics covered are mainly nutrition and exercise and their impact on diabetes prevention. Nutrition topics are how to decrease fat in the diet as well as learning how to eat to lower cardiovascular disease risk. They are also taught about overall healthy eating habits, based on the food guide pyramid and the mechanics involved in weight loss. Carbohydrate counting is also discussed in the last session. Participants are given a calorie, fat gm and carbohydrate goal throughout the first month which they plan to follow for the next year. They keep a weekly food and activity log to evaluate current habits and areas, which need to be changed.

Other topics covered, in addition to exercise and it's health and diabetes prevention benefits, are the definition of pre-diabetes and health risks associated with it, medications used in diabetes prevention and the importance of SMBG in tracking changes in blood glucose as well as macronutrient impact on glucose levels. During the exercise portion, patients will actually exercise for ½ hour during both the initial class time as well as in the follow up sessions in hopes they will make this a habit.

The cost of the class is \$200.00, but if they pay the day of class, it is \$180.00 (10% discount). We only

receive cash upfront and have a break-even point of 7 participants. All participants receive a pedometer, a blood glucose meter, free use of the Summit medical fitness facility for 1 month, open attendance at healthy hearts (supervised exercise with Cathy) twice/week, plus a registration fee waiver for the fitness facility. This class has been extremely successful due to the support we receive from our administration in preventing diabetes, having patients pay cash up front and being connected with a medical fitness facility. The marketing efforts have also been exceptional with an eye-catching title called “Living on the Edge”. The state support in using the software has also made it easy in keeping our database and giving us ideas of how to improve the class. So far it has been a win-win class for both our clients and our organization.

Reported by Jennifer Janetski, Kalispell Regional Medical Center.

N.B. The program is piloting a new software to track diabetes prevention.

Diabetes Prevention Resources



Prevention Materials from the Diabetes Prevention Program (DPP)

1. Small Steps Big Rewards Toolkit

Based on the DPP this kit contains an office poster along with 2 copies of patient booklets :

- Am I at Risk for Diabetes?
- Small Steps Big Rewards. Fat and Calorie Counter
- Small Steps Big Rewards. Food and Activity Tracker

The kit and its individual components can be downloaded free from www.ndep.nih.gov .

- #### **2. The Lifestyle Manual from the DPP can be downloaded from:**
- www.bsc.gwu.edu/dpp/lifestyle/dpp_part.html .
Each session is available individually.

See next page for other Diabetes Prevention Resources



A Red Carpet Welcome to our New DQCMS Partners

- Mercury Street Clinic – Butte
- Pioneer Medical Specialists - Dillon
- Torrey Mountain Medical – Dillon
- Burke Hansen, MD – Dillon
- Granite County Memorial Hospital & Nursing Home – Philipsburg
- Margo Bower Clinic - Drummond

SAVE THE DATE

WHAT: Cardiovascular Health Summit
WHEN: April 12, 2007
WHERE: Grouse Mountain Lodge
Whitefish, MT
(Call Ava Griffenberg at 406-444-5508 for more information)

“Times They are A’Changing” Hello and Goodbye

HelloMontana Diabetes Project welcomes Chris Jacoby RN as a new diabetes quality improvement coordinator. Chris comes to us from Blue Cross Blue Shield where she worked with Medicare medical review for over 5 years.

Goodbye Elizabeth “Liz” Johnson RNCNP, formerly, Project Manager for the Diabetes Project, took a new job October 31st in the Department of Health and Human Services as Nurse Consultant for Women’s and Men’s Health.

Other Diabetes Prevention Materials: Tip Sheets from the National Diabetes Education Program (NDEP)

(www.ndep.nih.gov/diabetes/prev/prevention.htm)

- **It’s Never Too Early to Prevent Diabetes. A Lifetime of Small Steps for a Healthy Family**
Tip sheet for women with a history of gestational diabetes
- **It’s Not Too Late to Prevent Diabetes. Take Your First Step Today**
Tip sheet to encourage older people to get moving, have fun, and prevent diabetes
- **Get Real! You Don’t Have to Knock Yourself Out to Prevent Diabetes**
Tip sheet for individuals who are over 45 and overweight
- **We Have the Power to Prevent Diabetes**
Tip sheet for American Indians and Alaska Natives with 7 tips to prevent diabetes

All are available to be downloaded directly and small quantities can be ordered for at no charge from the National Diabetes Information Clearinghouse. There is small charge for bulk orders.

~Montana Diabetes Project (MDP) Staff~

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